# CHECKLIST TO DESIGNATE AREAS OF EVALUATION FOR PROPOSAL

#### RESEARCH ADMINISTRATION ONLY

REQUISITION NUMBER **DUE DATE** TIME DUE 05/13/19 noon est 2749 MDOT PROJECT MANAGER CONTROL SECTION (CS) JOB NUMBER (JN) Kyle Kopper PROBLEM TITLE AND OR # OR19-003 Development of Guidelines for the use of Intermediate Diaphragms on Precast Concrete Beam Superstructures MDOT PROJECT MANAGER: Check all items to be included CONSULTANT: Provide only checked items below in in RFP. proposal When applicable, Best Value scoring criteria is listed separately in the RFP. \*\*Optional items are determined by the MDOT Project Manager. Check the appropriate Tier in the box below X TIER I TIER II TIER III (\$100,000 - \$250,000) (\$250,000-\$1,500,000) (>\$1,500,000) X Understanding of Service Qualifications of Team X Quality Assurance/Quality Control X X Location: The percentage of work performed in Michigan will be used for all selections unless the project is for on-site inspection or survey activities, then location should be scored using the distance from the consultant office to the on-site inspection or survey activity. X Past Performance 20 pages (MDOT 20 pages (MDOT Total maximum pages for RFP not including key personnel 20 pages (MDOT Forms not counted) Forms not counted) resumes. Resumes limited to 2 pages per key staff forms not counted) Resumes will only personnel. be accepted for Best

#### PROPOSAL AND BID SHEET E-MAIL ADDRESS - MDOT-RFP-Response@Michigan.gov

The Consultants will receive an e-mail reply/notification from MDOT when the proposal is received. Please retain a copy of this e-mail as proof that the proposal was received on time. Consultants are responsible for ensuring that MDOT receives the proposal on time.

\* Contact Contract Services Division immediately at 517-373-4680 if you do not get an auto response.

#### **GENERAL INFORMATION**

Value Selections.

Any questions relative to the scope of services must be submitted by e-mail to <a href="MDOT-Research@Michigan.gov">MDOT-Research@Michigan.gov</a>. Questions must be received by the Project Manager at least five (5) working days prior to the due date and time specified above. All questions and answers will be placed on the MDOT website as soon as possible after receipt of the questions, and at least three (3) days prior to the RFP due date deadline. The names of vendors submitting questions will not be disclosed.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

#### MDOT FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION

5100D - Request for Proposal Cover Sheet

**5100J** – Consultant Data and Signature Sheet (Required for all firms performing non-prequalified services on this project.) Schedule of Research Activities Form - Appendix B

Deliverables Table - Appendix A

Research Proposal Budget Form Worksheet Appendix C (Universities)

Or

Budget Exhibits required In Priced Proposal Guidelines (Consultants)

(These forms are not included in the proposal maximum page count.)

Page 1 of 2

MDOT 5100B-R (03/19) Page 2 of 2

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is interested in providing services, please indicate your interest by submitting a Proposal, Proposal/Bid Sheet or Bid Sheet as indicated below. The documents must be developed and submitted in accordance with the latest <a href="http://www.Michigan.gov/documents/mdot/MDOT">http://www.Michigan.gov/documents/mdot/MDOT</a> Consultant Vendor Selection Guidelines for Research Administration 01-2013 408228 7.pdf

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Prequalified Services – See the attached Scope of Services for required Prequalification Classifications.	Non-Prequalified Services – If selected, the vendor must make sure that current financial information, including labor rates, overhead computations, and financial statements, is on file with MDOT's Office of Commission Audits This information must be on file for the prime vendor and all sub vendors so that the contract will not be delayed. Form 5100J is required with proposal for all firms performing non-prequalified services on this project.
Qualification Based Selection - Use Consultant/Vendor	Selection Guidelines.
	n will review the information submitted and will select the firm proposals. The selected firm will be asked to prepare a priced .
	have a cost accounting system to support a cost plus fixed fee g system for the recording and accumulation of costs incurred that costs may be segregated and accumulated in the vendor's
Best Value – Use Consultant/Vendor Selection Guideline The bid amount is a component of the total proposal score, not	
BID SHEET INSTRUCTIONS	
· ·	. Submit bid sheet(s) with the proposal, to the email address: th this procedure may result in your bid being rejected from s.
PARTNERSHIP CHARTER AGREEMENT	
MDOT and ACEC created a Partnership Charter Agreement who successful partnering. Both the Consultant and MDOT MDOTPartnership Charter Agreement and are asked to follow and guidance's contained therein.	Project Manager are reminded to review the ACEC-
The prime consultant can be a private or public unive	rsity or business. The prime consultant/vendor is responsible

for the successful completion of the service and is expected to perform at least 40 percent of the services, by dollar value.

successful completion of the service and is expected to perform at least 40 percent of the services, by dollar value.

The prime consultant must be a Michigan university. The prime consultant/vendor is responsible for the

## FINANCIAL REQUIREMENTS FOR NON-PREQUALIFIED VENDORS

http://www.michigan.gov/documents/mdot/Financial\_Requirements\_for\_Non\_Prequalified\_Ven\_dors\_605817\_7.pdf

## **E-VERIFY REQUIREMENTS**

E-Verify is an Internet based system that allows an employer, using information reported on an employee's Form I-9, Employment Eligibility Verification, to determine the eligibility of that employee to work in the United States. There is no charge to employers to use E-Verify. The E-Verify system is operated by the Department of Homeland Security (DHS) in partnership with the Social Security Administration. E-Verify is available in Spanish.

The State of Michigan is requiring, under Public Act 200 of 2012, Section 381, that as a condition of each contract or subcontract for construction, maintenance, or engineering services that the pre-qualified contractor or subcontractor agree to use the E-Verify system to verify that all persons hired during the contract term by the contractor or subcontractor are legally present and authorized to work in the United States.

Information on registration for and use of the E-Verify program can be obtained via the Internet at the DHS Web site: <a href="http://www.dhs.gov/E-Verify">http://www.dhs.gov/E-Verify</a>.

The documentation supporting the usage of the E-Verify system must be maintained by each consultant and be made available to MDOT upon request.

It is the responsibility of the prime consultant to include the E-Verify requirement documented in this NOTIFICATION in all tiers of subcontracts.

#### DIGITAL SIGNATURE OF CONTRACTS

On <u>January 1, 2018</u>, Contract Services Division intends to fully implement the use of CoSign as the exclusive software for digitally signing all consultant contracts and consultant contract related documents. All other digital signing methods will no longer be accepted.

Prior to using CoSign, all external partners must apply for a free digital signature user account by submitting a MDOT Digital Signature Certificate Request Form.

# MDOT INSURANCE UPDATED 3.9.17

At a minimum, the insurance types and limits identified below, may be required from the selected consultant, prior to contract award.

Required Limits	Additional Requirements
Commercial General L	iability Insurance
Minimal Limits: \$1,000,000 Each Occurrence Limit \$1,000,000 Personal & Advertising Injury Limit \$2,000,000 General Aggregate Limit \$2,000,000 Products/Completed Operations	Consultants must have their policy endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds
Automobile Liabil	ty Insurance
Minimal Limits: \$1,000,000 Per Occurrence	
Workers' Compensa	tion Insurance
Minimal Limits: Coverage according to applicable laws governing work activities.	Waiver of subrogation, except where waiver is prohibited by law.
Employers Liabili	ty Insurance
Minimal Limits: \$500,000 Each Accident \$500,000 Each Employee by Disease \$500,000 Aggregate Disease	
Professional Liability (Errors a	nd Omissions) Insurance
Minimal Limits: \$1,000,000 Per Claim	

The Insurer shall provide at least thirty (30) days written notice of cancellation. The Prime Consultant will be responsible to verify subconsultant(s) compliance with MDOT's insurance requirements.

# **Michigan Department of Transportation**

## SCOPE OF SERVICE FOR RESEARCH SERVICES

**TITLE:** Development of Guidelines for the use of Intermediate Diaphragms on Precast Concrete Beam

Superstructures **OR#:** 19-003

**LOCATION**: Statewide

WORK DESCRIPTION: Research on Development of Guidelines for the use of Intermediate

Diaphragms on Precast Concrete Beam Superstructures

**ANTICIPATED START DATE:** 10/1/2019

**ANTICIPATED COMPLETION DATE:** 4/26/2021

The budget for this project cannot exceed \$291,610

### MDOT RESEARCH PROJECT ADMINISTRATION MANAGER:

#### **Kyle Kopper**

425 W. Ottawa

Lansing, Michigan 48933

E-MAIL: mdot-research@michigan.gov

## **GENERAL INFORMATION:**

#### 1. PROBLEM TO ADDRESS

While there is clear guidance in both MDOT and AASHTO Bridge Design Standards for the use of intermediate diaphragms in bridge superstructures of all types that support a curved road (a radius of curvature of 800 feet or less) and for highly skewed (skew angle of 30 degrees or more) bridges, the guidance for the use of intermediate diaphragms on precast concrete bridges on a straight roadway and with a skew of less than 30 degrees is less clear if not silent. MDOT has surveyed other States in the past to determine their practice for the use of intermediate diaphragms but has found little consistency.

With the increased use of precast concrete spread box beam and bulb tee beams, whose cross sections result in an increased resistance to lateral displacement or torsional rotation during the construction of a bridge superstructure, engineering judgement seems to suggest that the number of intermediate diaphragms may be able to be reduced if the need for the intermediate diaphragms isn't eliminated entirely. Reducing the number of intermediate diaphragms could decrease the cost of the project, decrease the duration of construction, and result in more durable superstructures.

#### 2. RESEARCH OBJECTIVES

- 1. Determine the current state of the practice from other DOTs.
- 2. Develop FEM models to assess the need for intermediate diaphragms.
- 3. Develop guidelines for the use of intermediate diaphragms.

#### 3. URGENCY AND IMPLEMENTATION BENEFIT TO MDOT

MDOT will adopt the guidelines developed as part of this project for the use of intermediate diaphragms and use them in the development of future bridge design policy decisions.

Potential benefits of being able to reduce or eliminate the use of intermediate diaphragms in precast concrete superstructures includes reducing the cost of construction, reducing the duration of construction, and the minimization of unnecessary details and connections resulting in lower maintenance structures. The guidelines developed will result in more consistent designs, whether done by MDOT or a Consultant, and could permit the standardization of fabrication and construction practices.

#### 4. RISKS OR OBSTACLES TO RESEARCH

- It may not be cost effective to include so many variables in the finite element models.
- It may be challenging to create a comprehensive guideline that is efficient to use.

## 5. DESIRED QUALIFICATIONS IN AN INVESTIGATOR(S)

The research team should include staff with experience in developing and analyzing finite element models. Additionally, it should include consulting staff with extensive experience designing bridges in Michigan for MDOT.

There is no statistical qualification requirement for this proposal.

## **CONSULTANT RESPONSIBILITIES:**

- 1. Complete a literature review to determine what recent research has been done into the need/benefit of intermediate diaphragms in precast concrete superstructures.
- 2. Complete a survey of other States to determine their current policies regarding the use of intermediate diaphragms in precast concrete bridge superstructures.
- 3. Develop finite element models to assess the contribution of intermediate diaphragms to the performance of precast concrete superstructures. The finite element models should account for variables such as, but not limited to, stage of life of the bridge (i.e., beams erected, deck poured but not cured, composite section subjected to normal loading, composite section subjected to Michigan Legal and Overload Loads, deck being removed as part of a future deck replacement), span length, beam spacing, MDOT standard beam type, beam size, skew angle, radius of curvature of the bridge deck, and number of spans. The skew angle should be limited to no greater than 30 degrees and the radius of curvature of the bridge deck should not be less than 800 feet. The modeling should only account for the presence of an intermediate diaphragm as a point of support against lateral displacement and torsion and a means of transferring forces between adjacent beams and should not focus on the configuration of the intermediate diaphragm (i.e., the sizes of the individual elements).
- 4. Develop guidelines for the use of intermediate diaphragms for precast concrete superstructures based on the finite element modeling. The guidelines should consider the use of both permanent and temporary intermediate diaphragms. Consideration should also be given to the potential impact that omitting intermediate diaphragms may have on future deck replacement operations.
- 5. Develop a draft Bridge Design Guide(s) that incorporate the guidelines developed for incorporation into MDOT's standards.
- 6. Prepare a report documenting the findings of the literature review and the finite element modeling and summarizing the recommended guidelines for the using of intermediate diaphragms in precast concrete superstructures.

Failure of any of the above will be found in noncompliance with the contract.

## **DELIVERABLES:**

- 1. Draft Bridge Design Guides that incorporate straightforward charts and/or tables that lead to clear guidance for each design condition.
- 2. Copies of the FEM models prepared.
- 3. Final report summarizing findings, as well as potential cost and construction time savings using data provided by MDOT.

## **MDOT RESPONSIBILITIES:**

MDOT will provide project over sight, provide contacts (if necessary) for staff at other State DOT's, and provide any historical information related to the use of intermediate diaphragms in Michigan.

## **COORDINATION PROCEDURES**

Work will be completed in compliance with the Research Implementation Manual.

## **CONSULTANT PAYMENT**

All billings for services must be directed to the Department and follow the current Research Implementation Manual. This document contains instructions and forms that must be followed and used for billing. Payment may be delayed or decreased if the instructions are not followed.

Payment to the Consultant for services rendered shall not exceed the maximum amount unless an increase is approved in accordance with the contract with the Consultant.

Direct expenses, if applicable, will not be paid in excess of that allowed by the Department for its own employees in accordance with the State of Michigan's Standardized Travel Regulations. Supporting documentation must be submitted with the billing for all eligible expenses on the project in accordance with the Reimbursement Guidelines. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the activities of this project.

The use of overtime hours is not acceptable unless prior <u>written</u> approval is granted by the MDOT project manager. Reimbursement for overtime hours that are allowed will be limited to time spent <u>on this project</u> in excess of forty hours per person per week. Any variations to this rule should be included in the priced proposal submitted by the Consultant and must have prior written approval by the MDOT project manager.

The basis of payment is Actual Costs for Universities as defined in standard MDOT contracts.

## PROPOSAL INFORMATION AND SCORING

Formal proposals are required and shall include the information as outlined in these Guidelines. This section is the information required in the proposal that will be used to score the qualifications of each consultant's proposal. The section numbering correlates to the score sheet. Therefore, the consultant should format their proposals consistent with the outline provided.

#### 1. UNDERSTANDING OF SERVICE: 40 POINTS

Describe understanding of the service intended to be proposed. This information is to be based on the scope of services.

**Problem Statement and Background Summary**- demonstrates good understanding of problem, looks objectively at problem, specifies problem limits and restricts scope appropriately, and cites relevant literature.

**Research Plan**- cites specific objectives clearly, technical approach responds to all written and implied requirements, difficult areas are identified and details to overcome are given, represents novel idea or technical approach, plan is feasible, and effort is consistent with scope of problem.

**Products and Implementation**- proposal clearly defines products to be delivered at completion, includes practical, realistic implementation plan.

**MDOT Involvement**- MDOT involvement is not excessive and is clearly defined and quantified.

## 2. QUALIFICATIONS OF TEAM: 30 POINTS -

Describe the structure of the project team including the roles of all key personnel and subcontractors. For each subcontractor describe role in service and include what percent of the task that the subcontractor is expected to provide. Provide résumés for each of the key staff of the prime and subcontractor.

**Facilities**- proposer has adequate access to equipment and/or laboratory required in study.

**Staffing**- personnel availability is clearly defined, shows a depth of qualified personnel, proposer has ability to manage a project of this size an sufficient resources to complete study, qualifications are directly related to the requirements of the project, plans for specific key personnel assignment included, and there is a reasonable balance between subcontractor and prime contractor.

**Statistical Qualification-** The required knowledge level for a research team in statistical analyses, if defined, will be in the RFP under the heading DESIRED QUALIFICATIONS IN AN INVESTIGATOR(S).

Proposals not documenting statistical training and experience levels required in the RFP may be classified as non-responsive.

## 3. RELEVANT PAST PERFORMANCE: 30 POINTS

Past performance project scores will be reviewed and/or past project references will be contacted. **Record of past accomplishment**- proposer satisfactorily completed past projects, was cooperative and flexible, and ended past projects according to the original budget and time schedule.

## 4. QUALITY ASSURANCE/QUALITY CONTROL (QAQC) PLAN: 5 POINTS

The proposer provided an outline of a QA/QC process. The QA/QC Manager is experienced with MDOT standards and practices.

## 5. LOCATION: 5 POINTS

The percentage of work hours performed in Michigan will be used for all selections unless the project is for on-site inspection or survey activity. The combination of location and percentage of work performed in Michigan should not exceed 5 points.

# Percentage of Work To Be Done in Michigan

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95% to 100%	5
80% to 94%	4
50% to 79%	3
25% to 49%	2
10% to 24%	1
Less than 10%	0

## 6. PRICE: 40 POINTS

Cost score is based on the lowest cost proposed divided by the current proposer cost multiplied by 40. Lowest bid shall receive 40 points.

TOTAL POINTS: 150

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Enter \$ Amt per FY						\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
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